

THE VASCULAR FLORA OF OKLAHOMA — ADDITIONS AND COMMENTS

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By the last of February, a number of plants may be found in flower or fruit in the United States south of the 36° north latitude, especially in the central and eastern portions. Few botanists, however, care to go afield when they must go encumbered by sufficient clothing to ward off the sharp wind and cold, wet ground of late winter or early spring. We began field work this spring (1968) the last two weeks in February. This proved very rewarding and thoroughly enjoyable, especially after a particularly wet, dreary fall and winter. Starting collections in the early part of the growing season has at least two advantages: (1) Very small plants may be seen at this time before the major plant cover has developed. Some small annual plants bloom and produce fruit only in the early part of the growing season and then are gone; others continue to flower into summer, but being covered by larger plants are seldom found and are sometimes missed entirely. (2) One may also gain a new and broader perspective of the flora. Some early flowering plants have one growth form at this time; but, later flowering specimens may look entirely different. It may be that, in some cases, different seasonal ecotypes comprise populations that continually flower throughout much of a growing season. Occasionally, specimens of the early flowering forms are encountered in a folder composed mainly of specimens collected later in the growing season. They are usually ignored as atypical and not representative, when indeed they are quite typical of one flowering form of the species.

This report is based mainly on the results of our field work in 1968. Five of the following species are reported as new to the Oklahoma flora and are marked with an asterisk. All specimens cited were collected by John and Connie

Taylor and are deposited at the Bebb Herbarium, Norman, Oklahoma, with duplicates of most deposited at SMU, Dallas, Texas.

Ophioglossum crotalophoroides Walt. This diminutive member of the Adder's-tongue ferns was recently reported as new to the Oklahoma flora from Bryan County (Taylor and Taylor 1967). From herbarium material and literature available, it might be concluded that this species is rare. Our observations this spring indicate this is not so. It was found in many sandy, overgrazed pastures throughout the northwestern portion of the Old Gulf Coastal Plain. Probably, because of its very small size and early fruiting, it is often overlooked. Fruiting specimens were found in Bryan County as early as February 10 and no later than May 1.

We now have additional specimens from the following sites in OKLAHOMA: ATOKA Co., 4811, 5 mi. ne of COLEMAN; CHOCTAW Co., 4795, 2 mi. w of BOSWELL; JOHNSTON Co., 4814, 3 mi. e, 1 mi. s of FILLMORE; MARSHALL Co., 4855, 2 mi. w, 4.5 mi. s of KINGSTON; MCCURTAIN Co., 4881, 8 mi. w of IDABEL and 4864, 1.5 mi. w of VALLIANT. Specimens were also collected from the following locations in TEXAS: BOWIE Co., 4842, 1.25 mi. w of DEKALB; FANNIN Co., 4832, 2 mi. ne of IVANHOE; LAMAR Co., 4833, 4 mi. ne of DIRECT; RED RIVER Co., 4838, 1 mi. e of WOODLAND.

**Ophioglossum vulgatum* L. This larger member of the Adder's-tongue ferns has been reported from a number of Texas counties including Denton, from Hempstead Co., Arkansas, and from Crawford Co., Kansas (Clausen 1938, Correll 1956). An Adder's-tongue fern was collected from a number of swampy areas and wet sandy bottomlands in Oklahoma and Texas this spring. These specimens proved to be *O. vulgatum*. This species usually has a much wider sterile blade and its rounded tip always lacks the apiculate tip of *O. engelmanni*, which it somewhat resembles. The veins of *O. engelmanni* form large areoles inclosing smaller ones; *O. vulgatum* lacks this characteristic. Likewise *O. engelmanni* is almost always found in limestone or tight clay soils in this area, while *O. vulgatum* occurs in sandy, wet bottoms. Its fruiting fronds can be found as much as three weeks earlier.

We have the following collections from OKLAHOMA: BRYAN Co., 4829, 4.5 mi. e of BENNINGTON, and 4846, 2 mi. w, 2.5 mi. n of OBERLIN; CHOCTAW Co., 4875, 4 mi. n of SAWYER; MCCURTAIN Co., 4897, 2 mi. n of VALLIANT; PUSHMATAHA Co., 4877, 1.5 mi. s of OLETA. TEXAS locations are: LAMAR Co., 4837, 1.5 mi. w of FAULKNER; RED RIVER Co., 4841, 1.5 mi. e of WOODLAND.

**Lepuropetalon spathulatum* (Muhl.) Ell. This very small member of the Saxifragaceae has been reported as close to Oklahoma as Kaufman Co., Texas (Shinners, 1958). Flowering specimens of this species were found in Bryan Co., Oklahoma in mid-February. By the last of April, it could not be located in any of the areas from which it had been previously collected. It is usually common, sometimes abundant, where it is found—in sandy overgrazed pastures, old fields, and along roadsides. It is probably quite abundant and wide spread throughout its range, but is seldom collected because of its early flowering date and minute size. All of our specimens had only five stamens instead of the reported ten. All collections listed below were collected from soils derived from sandstone formations.

OKLAHOMA locations are as follows: ATOKA Co., 4810, 5 mi. ne of COLEMAN; BRYAN Co., 4803, overgrazed pasture on northwest edge of DURANT; CHOCTAW Co., 4863, 2 mi. w. of BOSWELL; JOHNSTON Co., 4813, 3 mi. e, 1 mi. s of FILLMORE; MARSHALL Co., 4856, 2 mi. w, 4.5 mi. s of KINGSTON; MCCURTAIN Co., 4886, 2 mi. n of the Little River; PUSHMATAHA Co., 4880, 2.5 mi. e of OLETA. We also have specimens from the following TEXAS locations: BOWIE Co., 4843, 1.25 mi. w of DEKALB; FANNIN Co., 4831, 2 mi. ne of IVANHOE; GRAYSON Co., 4835, 2.5 m. e of DENISON; LAMAR Co., 4834, 4 mi. ne of DIRECT; RED RIVER Co., 4839, 1.5 mi. e of WOODLAND.

**Schrankia occidentalis* (W & S) Standl. Turner (1959) lists the range of this species of sensitive briar as the lower panhandle of Texas, occurring as far north as Crosby County. Our specimen 3868 was collected in the spring of 1967 from along U.S. 287, 3 miles north of the Oklahoma-Texas boundary in Cimarron County. Leaflets of our material are smooth and lack the pronounced venation of *S. uncinata*, the other species known from this area.

Epilobium glandulosum Lehm. var. *adenocaulon* (Haussk.) Fern. was reported as new to the Oklahoma flora

by Taylor and Taylor (1967). The specimens on which the report was based came from an isolated population in a branch of Tessequite Canyon in extreme western Cimarron County. Abundant material of this species has been subsequently collected from a canyon 16 miles N and 2 miles W of Boise City in northcentral Cimarron County.

**Verbena brasiliensis* Vell. Specimens of this South American adventive were collected from a roadside ditch about three-fourths of a mile NE of the small Johnston Co. community of Troy, Oklahoma. Gleason (1963) gives its range in this area as Arkansas and Louisiana and Gould (1962) lists it from Texas. It differs from a similar species, *V. bonariensis*, known to the Oklahoma flora, by absence of sessile amplexicaulate leaves. Our material has very narrow petioles, which sometimes may have a very thin margin along the basal portions. Spikes tend to be less compact, narrower, and a little longer than those of *V. bonariensis*.

Hedyotis rosea Raf. was reported to the Oklahoma flora from northeast and north central Oklahoma by Waterfall (1953). His Keys to the Flora of Oklahoma (1966) lists it from a number of scattered locations in the same general area. We have seen Bebb Herbarium specimens from Cleveland County, and collected it in Johnston County during the spring of 1963. Collections this spring added specimens from Bryan, Marshall, McCurtain, and Pushmataha Counties, indicating this plant grows throughout the eastern half of Oklahoma. It is often found with the ubiquitous *H. crassifolia*, but no intermediates were observed. Although *H. crassifolia* is rather variable in this area in flower color, flower size, as well as other characteristics, *H. rosea* is easily distinguished where the two occur together. From our observations, it seems that *H. rosea* is never as abundant, begins to flower slightly later, completes flowering sooner, and tends to favor habitats with slightly different edaphic conditions than *H. crassifolia* where they occur in the same area. It may be that a mechanism similar to that described by Lewis and Moore (1959) for *H. australis* is also involved in *H. rosea*.

**Aster brachyactis* Blake. Specimens of this western aster were collected 7 miles east of Kenton on Willow Creek, in western Cimarron Co., on Oct. 4, 1964. The material had been grazed by stock, thus was short and somewhat atypical in growth form. Dr. G. J. Goodman was kind enough to identify our 2552. It does not appear to have previously been reported for our Oklahoma flora.

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